REMARKS:

This paper is herewith filed in response to the Examiner's Office Action mailed on February 8, 2007 for the above-captioned U.S. Patent Application. This office action is a rejection of claims 1-13 of the application.

More specifically, the Examiner has rejected claims 1-12 under 35 USC 103(a) as being unpatentable over Lenzo (US6,587,444) in view of Papadopoulas (US5,594,720) and further in view of Magana (US6,134,227); and rejected claim 13 as being unpatentable over Lenzo in view of Magana. The Applicant respectfully traverses the rejections.

Claim 13 recites in part: "receiving, at the central station that is configured to transmit and receive simultaneously [...]"

In the rejection of claim 13 the Examiner states:

> "Regarding to claim 13, Lenzo teaches a data transmission method of a radio link system between a central station and at least one substation comprising the steps of: transmitting a time division multiplex signal (upper frame in Figure 4B) during a first plurality of time slots at a first frequency (f_d) from the central station B40; and receiving at the central station B40 signals from said at least one substation M40 during a second plurality of time slots at a second frequency (f_u), said second frequency (f_u) being a different frequency that said first frequency (f_d) (Column 5 Line 55-56) and said signals of said at least one substation at said second frequency forming a time division multiple access signal (bottom frame in Figure 4B). Lenzo, however, does not teach transmitting and receiving simultaneously. Magana teaches transmitting and receiving simultaneously (Column 7 Line 13-24). It would have been obvious to one skilled in the art to modify Lenzo to transmit and receive simultaneously as taught by Magana in order to allow greater amounts of information to be communicated (Column 7 Line 9-11)."

The Applicant disagrees with the Examiner.

Lenzo discloses:

> "Furthermore, since uplink and downlink communications are separated in both frequency and time, the disclosed system provides less cross-channel interference as compared to prior art systems. Also, since a single hardware path can be used for both uplink and downlink transmissions at both base stations and terminals, embodiments of the present invention retain the advantages of low cost and power consumption typically associated with conventional time-division duplex systems," (emphasis added), (col. 2, lines 34-42), and
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> "FIG. 4A depicts a FTDD base station B40 and a FTDD handset M40 communicating according to the TDMA/FTDD scheme of the present invention. As shown, signals transmitted from the FTDD base station B40 to the FTDD handset M40, and those transmitted from the FTDD handset M40 to the FTDD base station B40, are separated in both time and frequency," (emphasis added), (col. 5, lines 49-55), and
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> "As noted above, since uplink and downlink transmissions occur at separate times, a system utilizing the FTDD scheme of the present invention can be constructed so that the transmit and receive paths in both a base station and a terminal are shared as in a conventional time-division duplex system. As a result, a system constructed according to the invention provides the advantages of relatively low cost and low power consumption. This aspect of the invention is depicted in FIG. 6," (emphasis added), (col. 7, lines 55-64).

The Applicant contends that separating UL and DL communications in both frequency and time is seen as a key feature of Lenzo, as evidenced by the independent claims of Lenzo.

Magana discloses:

> "Generally, the FDD/TDD approach employs a dual duplex design, i.e., a first carrier channel for transmission of digital signals by two handset units, and a different, second carrier channel for reception of digital communications by the two handset units to a base unit. Over each carrier channel, communications are passed in bursts of distinct time intervals in a time division manner. Such an arrangement allows greater amounts of information, for example, both voice and data, to be simultaneously communicated," and
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> "Referring again to FIG. 4, in an embodiment of the present invention, transmission of voice (T.sub.x) 4, 6, 7 and transmission of data (T.sub.x) 24 by a first unit occur over a first carrier channel in separate, distinct time intervals. Over a different, second carrier channel, reception of data (R.sub.x) 22 and voice

> (R.sub.x) 28, 26, 30 cicurs over a second carrier channel in separate, distinct time intervals coinciding with the transmission time intervals. In this manner, transmission of voice 4, 6, 7 and reception of data 22 can occur simultaneously and transmission of data 24 and reception of voice 28, 26, 30 can occur simultaneously, each in distinct and different time intervals, over dual carrier frequencies," (emphasis added), (col. 7, lines 3-23).

Magana provides motivation for the reference disclosing "To adequately support two handsets an FDD base station design would require one RF transceiver for each handset," and "Since the cost of a cordless phone depends on not only the handset cost but the base station cost as well, the cost of the system increases," (col. 1, lines 39-45).

Thus, Lenzo teaches a UL (uplink) and DL (down link) communications separated both in time and frequency allowing a single hardware path on both the terminal and the BS (base station), providing less cross-channel interference but unavoidably reducing system capacity by half. Whereas, Magana teaches that a BS can receive and transmit simultaneously over different frequencies, without reducing system capacity. The Applicant contends that the disclosure in Magana is in clear contradiction to Lenzo.

Further, for at least these reasons stated the Applicant contends that the proposed modification in view of Magana improperly changes the principle of operation of Lenzo.

MPEP 2143.01 recites:

THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti,* 270 F.2d 810, 123 USPQ 349 (CCPA 1959) (Claims were directed to an oil seal comprising a bore engaging portion with outwardly biased resilient spring fingers inserted in a resilient sealing member. The primary reference relied upon in a rejection based on a combination of references disclosed an oil seal wherein the bore engaging portion was reinforced by a cylindrical sheet metal casing. Patentee taught the device required rigidity for operation, whereas the claimed invention required resiliency. The court reversed the rejection holding the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary

reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate." 270 F.2d at 813, 123 USPQ at 352).

The Applicant contends that the asserted combination of Lenzo and Magana would require a substantial redesign of the elements shown in Lenzo. Thus, the Applicant contends the asserted combination of Lenzo and Magana is not proper.

In addition, Magana describes simultaneous reception and transmission between terminal devices, which is not the case in claim 13. In the invention it is possible to receive and transmit simultaneously on the BS side, while allowing a single hardware path on the terminal side by allocating UL and DL communications for the terminal separated both in time and frequency, which does not result in a loss of system capacity, (see WO2000/54434 on page 5, line 30 to page 6, line 13). As such, the Applicant contends that the invention overcomes limitations of Lenzo and Magana and obtains the benefits of both.

The Applicant contends that a person skilled in the art would not modify Lenzo in view of Magana in the manner suggested by the Examiner. Further, the Applicant respectfully contends that the reasoning that a person skilled in the art would modify Lenzo in view of Magana to transmit and receive simultaneously was made in hindsight and is prohibited by MPEP 2143.01 and case law cited above.

Furthermore, the rejection of claim 13 is seen as improper, and the prima facie case for obviousness has not been met.

In regards to the rejection of the independent claims 1, 3 and 12 the Applicant disagrees with the rejection.

In the Office Action the Examiner states:

> "Lenzo, however, does not teach reserving at least one time slot from said first plurality of time slots or said second plurality of time slots for said at least one

> substation needing more traffic capacity than at least one second substation, said first plurality of time slots being different than said second plurality of time slots and substantially all time slots being used," and
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> "Papadopoulos teaches reserving at least one time slot from said first plurality of time slots or said second plurality of time slots for said at least one substation needing more traffic capacity than at least one second substation (Column 8 Line 3-5, Column 7 Line 11-14), said first plurality of time slots being different than said second plurality of time slots and substantially all time slots being used (Column 2 Line 43, Figure 8B)," and
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> "Lenzo in view of Papadopoulos, however, does not teach transmitting and receiving simultaneously. Magana teaches transmitting and receiving simultaneously (Column 7 Line 13-24)."

Claims 1, 3, and 12 of the invention recite language similar to that of claim 13. Therefore, the arguments presented above for claim 13 applies mutatis mutandis to independent claims 1, 3, and 12 of the invention. Neither Papadopoulos nor Magana can be used to change Lenzo's underlying principle of operation.

For at least the reasons stated above the Applicant contends that neither Papadopoulos nor Lenzo nor Magana either individually or combined is seen to disclose or suggest claims 1, 3, and 12.

Claims 2 and 10; and 4-9 and 11 depend from claims 1, and 3 respectively, the references cited do not disclose or suggest these claims, and all the claims 1-13 should be allowed.

The Examiner is respectfully requested to reconsider and remove the rejections of claims 1-13 and to allow all of the pending claims 1-13 as now presented for examination.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record. Should any unresolved issue remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

Respectfully submitted:

May 4, 2007

Jerry Stanton
Reg. No.: 46,008

Date

Customer No.: 29683
HARRINGTON & SMITH, PC
4 Research Drive
Shelton, CT 06484-6212
Phone: (203) 925-9400
Facsimile: (203) 944-0245
Email: gstanton@hspatent.com

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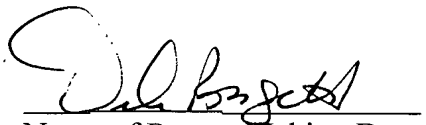

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